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**APPLICATION FOR UNITED STATES PATENT**

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**Title: IMPROVEMENT ON CLEANING IMPLEMENT**

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## IMPROVEMENT ON CLEANING IMPLEMENT

### Background of the Invention

5 The present invention relates to an implement for cleaning, and which has particular but not exclusive applicability to cleaning dishes, pots, pans, cutlery and the like.

There are many different types of implements for cleaning dishes and other similar utensils including sponges, scouring pads, wire wool and brushes. When cleaning dishes, one may often need to scrub a dish with a brush to loosen food debris stuck thereon, and then to remove the loosened debris by another cleaning implement such a  
15 sponge. This can be clumsy as more than one cleaning implement is involved. Sometimes, food debris may comprise both liquid food debris as well as solid debris and a conventional scrubbing brush is inappropriate for removing both.

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Another problem with conventional cleaning implements is that after cleaning, dirt and food debris are often trapped in the cleaning portion of the cleaning implements. For instance, when a conventional scrubbing brush is used, the

dirt and food debris may be trapped between the bristles of the brush. Once trapped, these particles of dirt and food debris are difficult to be removed and will decay. The cleaning portion of the implement would then become a breeding ground for bacteria and further use of the implement would only spread the bacteria.

The present invention seeks to provide a cleaning implement which addresses these problems, although has wider applicability to other types of cleaning.

#### Summary of the Invention

According to the present invention there is provided a cleaning implement comprising a body from which extends an elongate handle, a plurality of bristles depending from an underside of the body, and an elongate squeegee blade formed of resiliently-flexible material arranged on the body, extending in a direction generally transverse to the direction in which the handle extends, and generally transverse to the direction in which the bristles extend. Such an implement is able to provide, in one implement, effective cleaning capabilities offering both scrubbing and wiping or scraping functions.

Preferably, the squeegee blade may be arranged at an opposite end of the body to the handle.

- 5 The squeegee blade may suitably extend laterally in a direction which has a component in a direction opposite to that in which the bristles extend.

The squeegee blade may particularly curve upwardly away from the body. More particularly, the squeegee blade may be made of an elastomer. A material such as an elastomer provides the preferred resiliency and flexibility of the squeegee blade, allowing the blade to closely follow the contours of non planar objects being cleaned.

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Advantageously, the squeegee blade may be over-molded onto the body.

- 20 The squeegee blade may suitably have a width in its elongate direction comparable to a lateral width of the body.

Preferably, the body may include a protruding lip with the squeegee blade molded onto the lip. The provision of the

lip forming a base or root region of the squeegee blade strengthens its structure.

The cleaning implement may be generally in the shape of a spatula with the bristles extending from a lower side thereof.

According to a second aspect of the present invention, there is provided a cleaning implement comprising a body with a lower surface from which a plurality of bristles extend and an elongate squeegee blade formed of a resilient material extending from the body in a direction generally perpendicular to the direction in which the bristles extend. Such an implement, similar to the implement according to the first aspect of the present invention, is able to provide, in one implement, effective cleaning capabilities offering both scrubbing and wiping or scrapping functions.

## 20 Brief Description of the Drawings

The present invention is now described, by way of examples only, with reference to the following drawings in which:-

Figure 1 is a perspective view of a brush incorporating a squeegee in accordance with a first embodiment of the invention; and

Figures 2 to 4 are perspective views of second to fourth embodiments of the invention respectively.

#### Detailed Description of the Preferred Embodiments

Turning to a first embodiment of the invention, as can be seen in Figure 1 there is provided a cleaning implement resembling a brush and generally indicated 2 having a body 4 and a handle 6 extending therefrom.

The body 4 comprises a brush head 8 having a lower surface provided with a plurality of bristles 12. The brush head 8 of the body 4 is in the general shape of a spatula having raised surrounding lateral side wall portions 16 and a rear side wall portion 18. A squeegee blade 20 is arranged at a front end of the body 4 opposite to the end of the body 4 from where the handle 6 extends. The squeegee blade 20 is preferably made of a soft and slightly resiliently-flexible plastics material such as an elastomer, which may be a polyolefin or a flexible polyvinyl chloride (PVC). The body 4 is preferably made of relatively rigid polymeric

material such as polypropylene although other suitable materials may be used. The squeegee blade 20 and the body 4 may be made by molding both materials in one step. Alternatively, the body 4 may be molded first and the squeegee blade 20 may be over-molded on the front end of the body 4 in a subsequent step. Although not shown in the figures, the body 4 has a lip integrally formed therewith and extending from the front end thereof. In particular, the lip curves slightly upwardly and extends away from the brush head 8. The squeegee blade 20 may be molded over to the lip of the brush head in a way such that the squeegee blade 20 envelops the lip, thereby thereby serving as a secure base or root onto which the squeegee blade 20 can be molded.

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The squeegee blade 20 may have a shape also curving slightly upwards and extending away from the brush head 8. In particular, the squeegee blade 20 extends in a direction such that at least a component of that direction is opposite to the direction in which the bristles 12 extends.

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The handle 6 is in the shape of a column having generally a cylindrical part 22, and is sized to fit the grip of a user, and is joined to the brush head 8 through a neck

region 23. It is to be noted that a longitudinal axis of the squeegee blade 20 indicated by the dotted line A-A' is substantially perpendicular to the axis of the handle 6 and to the direction of the bristle, and thereby to the direction of movement of the brush when the brush 2 is being moved in a forward and backward manner, so that inventing the implement (by twisting about the handle) from the orientation where the bristles are lowermost brings the blade 20 lowermost.

It is envisaged that in use, a user holding the cleaning implement 2 at the handle 6 can take advantage of this particular construction, for instance, by firstly scrubbing a dirty plate with the bristles 12 to loosen the dirt, and then inverting the implement and scraping the plate with the squeegee blade 20 to remove the loosened dirt altogether. Alternatively, if the food debris is more liquid or looser a user might firstly scrape the surface with the squeegee blade 20 to remove debris from the plate, for instance, to a garbage disposal or trash can. The plate can subsequently be cleaned by applying detergent and scrubbing with the bristles of the brush 2. As can be seen, the brush 2 provides in one single implement very



effective cleaning allowing both scrubbing and a squeegee wiping action.

It will also be appreciated that in use, as the squeegee blade 20 is pressed against a plate surface, the squeegee blade 20 may change shape slightly according to the contour of the plate surface because of the blade's inherent deformability such that the contours of the plate can be followed intimately by the squeegee blade 20 for very effective cleaning.

Figures 2 to 4 illustrate the second, third and fourth embodiments of the invention respectively. These three embodiments together with the first embodiment (in Figure 1) share the same inventive concept although the shape and size of these brushes are different to suit particular applications. For instance, in the second embodiment as shown in Figure 2, the cleaning implement shown therein has a narrower brush head with a squeegee blade 20A having a width which is substantially similar to the lateral width of the brush head. The squeegee blade curves slightly upwards and away from the brush head. This embodiment of the cleaning implement is, for example, useful in cleaning the interior of a jar because of its relatively small brush

head. Referring to Figure 3, the brush head of the cleaning implement is generally circular in shape and a squeegee blade 20B which is flatter when compared to that in the cleaning implement of Figure 2, and flares outwardly. Referring to Figure 4, the cleaning implement has a squeegee blade 20C which has a width substantially longer than the lateral width of the brush head. In particular, the squeegee blade curves more sharply upward in a hook-like fashion and the upper end portion thereof almost points in the opposite direction to that in which the bristles extend.

Although the invention is described in relation to a brush for cleaning dishes, it is envisaged that the brush may also be used in other cleaning operations. For example, a brush made in accordance with the present invention may be used in a variety of other domestic applications.